

Ice cores hold threat of climate time bomb

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A CLIMATE change timebomb may be just 10 years away from detonating, according to the latest global warming evidence.

Data from a deep ice core drilled out of the Antarctic permafrost reveals a shocking rate of change in carbon dioxide concentrations. The core, stretching through layers dating back 800,000 years, contains tiny bubbles of ancient air that can be analysed.

Scientists who studied the samples found that they left no doubt as to the extent of the build-up of greenhouse gases. For most of the past 800,000 years, carbon dioxide levels had remained at between 180 and 300 parts per million (ppm) of air. Today they were at 380 ppm.

In the past, it had taken 1000 years for carbon dioxide to rise by 30 ppm during natural warming periods. According to the new measurements, the same level of increase has occurred in the past 17 years.

Isotopic tests confirmed the recent carbon dioxide had come from fossil fuel sources and must be due to human activity.

Eric Wolff, from the British Antarctic Survey, who presented the findings at the BA Festival of Science in Norwich, was alarmed by the rate of change.

"We really are in a situation where something's happening that we don't have any analogue for in our records. It's an experiment we don't know the result of," he said.

Many experts recognise a "tipping point" of 440 ppm of carbon dioxide, after which climate change starts to run out of control.

Although opinions differ, it was generally accepted that at some stage a "step change" is reached after which global warming accelerates exponentially, Dr Wolff said. According to the new evidence, the threshold may now be only a decade away.

"We could expect that tipping point to arrive in 10 years' time," he told the meeting at the University of East Anglia. The ice core also showed a doubling in concentration of methane.